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M.L.  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

ANDREAS SUHRBIER  
SCOTT ANTHONY THOMSON  
RAJIV KHANNA  
SCOTT RENTON BURROWS  
BARBARA ELIZABETH HOWIESON  
COUPAR  
DENIS JAMES MOSS

Group Art Unit: 1644

Examiner: Mary Tung

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For: POLYEPITOPE VACCINES

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PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Please amend the above-identified patent application as follows:

In the claims:

Please delete claims 1-<sup>13</sup>~~30~~ and add the following claims:

21.126 -- <sup>14</sup>~~31~~. A polynucleotide comprising a nucleic acid sequence encoding at least two CTL epitopes,

wherein at least two of the epitopes are restricted by the same HLA gene.

AI 21.126  
32. <sup>15</sup>~~31~~. The polynucleotide of claim <sup>14</sup>~~31~~, wherein the sequence encoding the CTL epitopes are contiguous.

R1.126 ~~16~~<sup>14</sup>/<sub>33</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, wherein said polynucleotide encodes two epitopes.

R1.126 ~~17~~<sup>14</sup>/<sub>34</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, wherein said polynucleotide encodes three epitopes.

R1.126 ~~18~~<sup>14</sup>/<sub>35</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, wherein said polynucleotide encodes nine epitopes.

R1.126 ~~19~~<sup>14</sup>/<sub>36</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, wherein said polynucleotide encodes ten epitopes.

R1.126 ~~20~~<sup>14</sup>/<sub>37</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, wherein said polynucleotide encodes CTL epitopes from a plurality of pathogens.

R1.126 ~~21~~<sup>14</sup>/<sub>38</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, further defined as an expression vector.

R1.126 ~~22~~<sup>21</sup>/<sub>39</sub> The polynucleotide of claim ~~38~~<sup>21</sup>, wherein said vector is selected from the group consisting of a viral vector and a virus-like particle (VLP).

R1.126 ~~23~~<sup>22</sup>/<sub>40</sub> The polynucleotide of claim ~~39~~<sup>22</sup>, wherein said viral vector is a vaccinia vector.

R1.126 ~~24~~<sup>22</sup>/<sub>41</sub> The polynucleotide of claim ~~39~~<sup>22</sup>, wherein said viral vector is an avipox virus vector.

R1.126 ~~25~~<sup>22</sup>/<sub>42</sub> The polynucleotide of claim ~~39~~<sup>22</sup>, wherein said vector is a VLP.

R1.126 ~~26~~<sup>14</sup>/<sub>43</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, wherein at least one of said CTL epitopes is derived from a pathogen.

R1.126 ~~27~~<sup>14</sup>/<sub>44</sub> The polynucleotide of claim ~~31~~<sup>14</sup>, wherein said polynucleotide comprises a nucleic acid sequence encoding CTL epitopes derived from a plurality of pathogens.

R1.126 ~~28~~<sup>26</sup>/<sub>45</sub> The polynucleotide of claim ~~33~~<sup>26</sup>, wherein said pathogen is selected from the group consisting of Epstein Barr Virus, Influenza Virus, Cytomegalovirus, Adenovirus and HIV.

R1.126 <sup>29</sup>/<sub>46</sub>

The polynucleotide of claim <sup>27</sup>/~~44~~, wherein said pathogen is selected from the group consisting of Epstein Barr Virus, Influenza Virus, Cytomegalovirus, Adenovirus and HIV.

R1.126 <sup>34</sup>/<sub>47</sub>

The polynucleotide of claim <sup>14</sup>/~~31~~, wherein at least one of said epitopes is derived from a tumor protein.

R1.126 <sup>31</sup>/<sub>48</sub>

The polynucleotide of claim <sup>14</sup>/~~31~~, further comprising a nucleic acid sequence encoding a T helper cell epitope, a B cell epitope, or a toxin.

R1.126 <sup>32</sup>/<sub>49</sub>

The polynucleotide of claim <sup>14</sup>/~~31~~, further comprising a nucleic acid sequence encoding a T helper cell epitope.

R1.126 <sup>33</sup>/<sub>50</sub>

The polynucleotide of claim <sup>14</sup>/~~31~~, further comprising a nucleic acid sequence encoding a B cell epitope.

R1.126 <sup>34</sup>/<sub>51</sub>

The polynucleotide of claim <sup>14</sup>/~~31~~, further comprising a nucleic acid sequence encoding a toxin.

R1.126 <sup>35</sup>/<sub>52</sub>

A nucleic acid vaccine comprising a polynucleotide comprising a nucleic acid sequence encoding at least two CTL epitopes from one or more pathogens, wherein at least two of said epitopes are restricted by the same HLA gene, and an acceptable carrier.

R1.126 <sup>36</sup>/<sub>53</sub>

A synthetic or recombinant protein comprising at least two CTL epitopes from one or more pathogens, wherein at least two of said epitopes are restricted by the same HLA gene.

R1.126 <sup>37</sup>/<sub>54</sub>

The synthetic or recombinant protein of claim <sup>36</sup>/~~53~~, wherein said protein comprises two CTL epitopes.

R1.126 ~~38.~~  
~~55.~~

The synthetic or recombinant protein of claim ~~53~~<sup>36</sup>, wherein said protein comprises three CTL epitopes.

R1.126 ~~39.~~  
~~56.~~

The synthetic or recombinant protein of claim ~~53~~<sup>36</sup>, wherein said protein comprises nine CTL epitopes.

R1.126 ~~40.~~  
~~57.~~

The synthetic or recombinant protein of claim ~~53~~<sup>36</sup>, wherein said protein comprises ten CTL epitopes.

R1.126 ~~41.~~  
~~58.~~

The synthetic or recombinant protein of claim ~~53~~<sup>36</sup>, wherein said protein comprises at least one CTL epitope derived from a pathogen.

A1.126 ~~42.~~  
~~59.~~

The synthetic or recombinant protein of claim ~~53~~<sup>36</sup>, wherein said protein comprises CTL epitopes derived from a plurality of pathogens.

R1.126 ~~43.~~  
~~60.~~

The synthetic or recombinant protein of claim ~~58~~<sup>41</sup>, wherein said pathogen is selected from the group consisting of Epstein Barr Virus, Influenza Virus, Cytomegalovirus, Adenovirus and HIV.

R1.126 ~~44.~~  
~~61.~~

The synthetic or recombinant protein of claim ~~59~~<sup>42</sup>, wherein said pathogen is selected from the group consisting of Epstein Barr Virus, Influenza Virus, Cytomegalovirus, Adenovirus and HIV.

R1.126 ~~45.~~  
~~62.~~

The synthetic or recombinant protein of claim ~~53~~<sup>36</sup>, wherein said protein comprises at least one CTL epitopes from a tumor protein.

R1.126 ~~46.~~  
~~63.~~

The synthetic or recombinant protein of claim ~~53~~<sup>36</sup>, further comprising a T helper cell epitope, a B cell epitope, or a toxin.

R1.126 47.  
64.

The synthetic or recombinant protein of claim <sup>36</sup>~~53~~, further comprising a T helper cell epitope.

R1.126 48.  
65.

The synthetic or recombinant protein of claim <sup>36</sup>~~53~~, further comprising a B cell epitope.

R1.126 49.  
66.

The synthetic or recombinant protein of claim <sup>36</sup>~~53~~, further comprising a toxin.

R1.126 50.  
67.

A polyepitope vaccine, the vaccine comprising a synthetic or recombinant protein comprising at least two CTL epitopes, wherein at least two of the epitopes are restricted by the same HLA gene.

A1  
Conrad.  
R1.126 51.  
68.

A method of vaccinating a subject against one or more pathogens which method comprises administering to the subject a polynucleotide comprising a nucleic acid sequence encoding at least two CTL epitopes, wherein at least two of the epitopes are restricted by the same HLA gene.

R1.126 52.  
69.

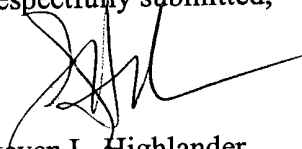
A method of vaccinating a subject against one or more pathogens which method comprises administering to the subject a synthetic or recombinant protein comprising at least two CTL epitopes, wherein at least two of the epitopes are restricted by the same HLA gene. --

A fee as set forth in 37 C.F.R. §§ 1.16-1.21 in the amount of \$1266.00 is enclosed herewith.

If an appropriate check has not been enclosed, or if it is insufficient under 37 C.F.R §§ 1.16 to 1.21, the Commissioner is hereby authorized to deduct any necessary fees from Fulbright & Jaworski Deposit Account No. 50-1212/10011879/01973.

Should Examiner Tung have any questions regarding this communication, she is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Steven L. Highlander  
Reg. No. 37,642  
Attorney for Applicants

FULBRIGHT & JAWORSKI  
600 Congress Avenue  
Suite 1900  
Austin, Texas 78701  
(512) 418-3000

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